



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,736	04/21/2004	Tod S. Heiles	200312473-1	4783
22879	7590	08/13/2009	EXAMINER	
HEWLETT-PACKARD COMPANY Intellectual Property Administration 3404 E. Harmony Road Mail Stop 35 FORT COLLINS, CO 80528				LEBRON, JANNELLE M
ART UNIT		PAPER NUMBER		
2861				
NOTIFICATION DATE			DELIVERY MODE	
08/13/2009			ELECTRONIC	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JERRY.SHORMA@HP.COM
ipa.mail@hp.com
jessica.l.fusek@hp.com

Office Action Summary	Application No.	Applicant(s)	
	10/828,736	HEILES ET AL.	
	Examiner	Art Unit	
	JANELLE M. LEBRON	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 March 2009.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,6-28,30-36,40-47,49,50,52 and 53 is/are pending in the application.
 4a) Of the above claim(s) 6-8,18-28,30-36,40-46,49,50,52 and 53 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,9-17 and 47 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 21 April 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. In view of the appeal brief filed on 03/03/2009, PROSECUTION IS HEREBY REOPENED. A new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 9-17 and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Gast et al. (US Patent 6,076,915).

Gast et al. discloses the following claimed limitations:

- **Claim 1:** a method for calibrating one or more printheads [Abstract], the method comprising:
 - printing a first reference image (130 in fig. 13A and 140 in fig. 14A) using a first portion of image forming points (“a” in fig. 12) of a first printhead (as seen in fig. 12; col. 11, lines 21-24);
 - printing a first diagnostic image (130 in fig. 13B and 140 in fig. 14B) using a second portion of image forming points (“b” or “c” in fig. 12; depending on the embodiment) of the first printhead (as seen in fig. 12; col. 10, lines 64-67 and col. 11, lines 26-28), wherein the first reference image and the first diagnostic image at least partially overlap (as seen in figs. 13C and 14C);
 - detecting a first optical density of the combined first reference image and the first diagnostic image (with sensor 58; col. 5, lines 48-50); and
 - determining a compensation value based upon the first optical density (col. 11, lines 14-20 and 37-40), wherein the first portion of image forming points comprises a first segment of a column of image forming points and wherein the second portion comprises a second segment of the column of image forming points on the first printhead (as seen in fig. 12).

- **Claim 9:** wherein the first reference image is printed while the first printhead is at a first horizontal position and wherein the first diagnostic image is printed while the first printhead is at the first horizontal position (when the patterns overlap; both sections are at the same position).
- **Claim 10:** including:
 - printing a second reference image (132 in fig. 13A) with the first portion of the first printhead ("a" in fig. 12) while the first printhead is at a second horizontal position (the pattern 132 is at a different position in the horizontal axis in comparison to pattern 130);
 - printing a second diagnostic image (132 in fig. 13B) with the second portion while the first printhead is at a third horizontal position positively offset from the second horizontal position by a first offset distance (patterns in fig. 13B are offset by a distance Y which is different to the offset distance X between patterns in fig. 13A; col. 11, lines 12-14);
 - detecting a second optical density of the combined second reference image and the second diagnostic image, wherein the compensation value is additionally based upon the second optical density (the optical density of each overlay patterns in fig. 13C is determined).
- **Claim 11:** wherein the first reference image includes at least one mark having a width and wherein the first offset distance is no greater than the width (as seen in figs. 13A-13C).

- **Claim 12:** wherein the first horizontal position and the second horizontal position have a common location (the patterns in fig. 13A and fig. 13B have a specific spacing between them that is the same between patches).
- **Claim 13:** including:
 - printing a third reference image (134 in fig. 13A) with the first portion while the first printhead is at a fourth horizontal position (the pattern 134 is at a different position in the horizontal axis in comparison to pattern 130);
 - printing a third diagnostic image (134 in fig. 13B) with the second portion while the first printhead and is at a fifth horizontal position positively offset from the fourth horizontal position by a second offset distance greater than the first offset distance (patterns in fig. 13B are offset by a distance Y which is different to the offset distance X between patterns in fig. 13A; col. 11, lines 12-14); and
 - detecting a third optical density of a combination of the third reference image and the third diagnostic image, wherein the compensation value is determined based additionally upon the third optical density (the optical density of each overlay patterns in fig. 13C is determined).
- **Claim 14:** wherein the third reference image includes at least one mark, wherein each mark has a width and wherein the third offset distance is less than the width (as seen in figs 13A-13C).

- **Claim 15:** wherein the third horizontal position is offset from the second horizontal position in a first direction and wherein the fifth horizontal position is offset from the third horizontal position in the first direction (as seen in fig. 13).
- **Claim 16:** including:
 - printing a fourth reference image (136 in fig. 13A) with the first portion while the first printhead is at a sixth horizontal position (the pattern 136 is at a different position in the horizontal axis in comparison to pattern 130);
 - printing a fourth diagnostic (136 in fig. 13B) with the second portion while the first printhead is at a seventh horizontal position negatively offset from the sixth horizontal position by a third distance offset (patterns in fig. 13B are offset by a distance Y which is different to the offset distance X between patterns in fig. 13A; col. 11, lines 12-14); and
 - detecting a fourth optical density of a combination of the fourth reference image and the fourth diagnostic image, wherein the compensation value is determined based additionally upon the fourth optical density (the optical density of each overlay patterns in fig. 13C is determined).
- **Claim 17:** including:
 - printing a fifth reference image using the first portion while the first printhead is at an eighth horizontal position;

Art Unit: 2861

- printing a fifth diagnostic image using the second portion while the first printhead is at a ninth horizontal position negatively offset from the eighth horizontal position by a fourth distance greater than the third distance; and
 - detecting a fifth optical density of a combination of the fourth reference image and the fourth diagnostic image, wherein the compensation value is determined based additionally upon the fourth optical density (note that the patterns are represented by squares in figs. 13 and 14 but other shapes (lines, circles, diamonds, etc.) may be used; col. 10, lines 60-63; the same way that fig. 4 shows seven patterns per row, it is inherent and obvious that there could be a fifth pattern that has the same teachings and functions of the first-fourth patterns).
-
- **Claim 47:** a method for calibrating one or more printheads [Abstract], the method comprising:
 - printing a first reference image (130 in fig. 13A and 140 in fig. 14A) using a first portion of image forming points ("a" in fig. 12) of a first printhead (as seen in fig. 12; col. 11, lines 21-24);
 - printing a first diagnostic image (130 in fig. 13B and 140 in fig. 14B) using a second portion of image forming points ("b" or "c" in fig. 12; depending on the embodiment) of the first printhead (as seen in fig. 12; col. 10, lines 64-67 and col. 11, lines 26-28), wherein the first portion of image forming points comprises a first segment of a column of image forming points and wherein the second portion comprises a second segment of the column of

image forming points on the first printhead (as seen in fig. 12) and wherein the first reference image and the first diagnostic image at least partially overlap (as seen in figs. 13C and 14C), wherein the first reference image is printed while the first printhead is at a first horizontal position and wherein the first diagnostic image is printed while the first printhead is at the first horizontal position (when the patterns overlap; both sections are at the same position);

- detecting a first optical density of the combined first reference image and the first diagnostic image (with sensor 58; col. 5, lines 48-50);
- determining a compensation value based upon the first optical density (col. 11, lines 14-20 and 37-40);
- printing a second reference image (132 in fig. 13A) with the first portion of the first printhead ("a" in fig. 12) while the first printhead is at a second horizontal position (the pattern 132 is at a different position in the horizontal axis in comparison to pattern 130);
- printing a second diagnostic image (132 in fig. 13B) with the second portion while the first printhead is at a third horizontal position positively offset from the second horizontal position by a first offset distance (patterns in fig. 13B are offset by a distance Y which is different to the offset distance X between patterns in fig. 13A; col. 11, lines 12-14);
- detecting a second optical density of the combined second reference image and the second diagnostic image, wherein the compensation value

is additionally based upon the second optical density (the optical density of each overlay patterns in fig. 13C is determined).

Response to Arguments

4. Applicant's arguments with respect to claims 1, 9-17 and 47 have been considered but are moot in view of the new ground(s) of rejection.

Communication with the USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANNELLE M. LEBRON whose telephone number is (571)272-2729. The examiner can normally be reached on Monday thru Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on (571) 272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MATTHEW LUU/
Supervisory Patent Examiner, Art
Unit 2861

/Jannelle M. Lebron/
Examiner, Art Unit 2861